

In The Claims:

Claims 1 and 2, amend to read as follows:

1. (Amended) In a wavelength router for fiber optical networking and computer interconnects, the improvement comprising:

at least one diffraction grating which utilizes only N wavelengths to interconnect N inputs to N outputs in a fully non-blocking manner, wherein N is any number, and

a second diffraction grating positioned to receive outputs from said first mentioned diffraction grating.

2. (Twice Amended) The improvement of Claim 1, wherein said first mentioned diffraction grating is augmented by elements selected from the group consisting of coupler and wavelength selective elements to provide fully non-blocking interconnection.

Claim 5, cancel.

Claims 6, 10, and 13, amend to read as follows:

6. (Amended) The improvement of Claim 1, wherein said diffraction gratings are identical.

10. (Amended) The improvement of Claim 7, wherein said plurality of filter modules comprises N-1 different filters for said N inputs and said N wavelengths, wherein N is any number.

13. (Amended) The improvement of Claim 11, wherein said retro-reflector assembly is constructed to vertically displace and retro-reflect N-1 beams, wherein N is any number.

Claim 16, amend to read as follows:

16. (Amended) A wavelength-conserving grating router for intermediate wavelength density, including:

at least one diffraction grating for receiving a number of inputs and for discharging a greater number of outputs, and

means including a second diffraction grating for combining at least a portion of said outputs.

Claim 19, cancel.

Claim 20, amend to read as follows:

20. (Amended) The grating router of Claim 16, additionally including assemblies operatively connected to said diffraction gratings selected from the group consisting of collection and re-direction optic and retro-reflector assemblies, and collection optics and filter module assemblies.